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ABSTRACT

Two studies were designed to investigate the age at which students adapt expository writing to meet the needs of different audiences. In the first study, students in grades four, eight, twelve, and at university level wrote descriptions of geometric figures that would enable someone unfamiliar with a figure to draw it. For all grades, realistic communications (including feedback drawings made from descriptions) contained more audience-oriented statements than "classroom exercise" descriptions which were less realistic. When the age of the intended audience was given, descriptions from students of grades 12 and higher contained audience-related statements, but those statements were not strongly related to the quality of information in the description. In the second study, which consisted of student revisions of their own compositions, fourth graders made no significant changes, while eighth graders made changes that reduced the quality of the descriptions. Only twelfth graders made changes that increased the quality of the revisions. Results from both studies suggest that not until grade 12 do students apply information of a general nature to effectively modify their writing. (Author/RL)

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The Development of Audience Awareness in Writing¹

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Running head: Writing for an Audience

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These studies were designed to investigate the age at which expository writing is adapted by students to meet the needs of different audiences. The consideration of audience characteristics for effective writing was an essential part of the classical discipline of rhetoric, whether language was spoken or written. More recently, the work of James Britton and his colleagues (Britton, Burgess, Martin, McLeod and Rosen, 1975) again has focussed attention on the significance of this variable even for writing in the classroom.

The ability of the writer to modify writing in order to meet the needs or demands of different audiences stands in a rather curious relation to the ability of the speaker to modify speech for different audiences. We know from recent research on children's conversations that children as young as four years of age are able to adapt their speech in sophisticated ways depending on whom they are talking to (for example, see Gelman & Shatz, in press). At first glance this seems not to be the case for writing, although data of this kind on writing are surprisingly meager. Perhaps this is because, as Martin Nystrand (1977) has analyzed, much of the data collected on writing has been concerned with dependent measures such as the size of the T-unit that are based exclusively on the text itself, rather than with the text as a communication instrument from writer to reader. There are indications in the literature that students do modify their writing depending on such factors as audience

characteristics. For example, McLeod (1976) reported that students used a more informal style of writing for an audience of peers than for an audience of adults. Rosen (cited in Britton et al., 1975, p. 2) found that for individual adolescent writers, variation in mean T-unit size across types of composition equalled that found across a four year age span. Such a range in a text measure probably reflects adolescents' modification of their writing to meet the requirements of a range of writing situations. The two studies reported below are an initial effort to gather data on the ability of students of various ages to structure their writing as a function of different writing situations. The first study was concerned with the age at which writers begin to use overview statements (what we call context-creating statements), and with the writing situations that foster the use of such statements. The second study was concerned with the age at which writers begin to revise their writing according to criteria such as a request to make a composition more convincing or more interesting.

In the first study we were interested in examining the use of context-creating statements in expository writing. By the term context-creating is meant language that informs the reader of the general nature of the information to be given without imparting specific details. Such statements serve a number of functions. First they name the topic or sub-topic. Second they orient the reader to the information that is to

be presented. Third they often establish the range of information to be presented--that is, how extensively the topic is to be considered. As such, these context-creating statements fulfill Halliday's (1973) three metafunctions of language, the ideational, the interpersonal, and the textual. The ideational function is fulfilled by the naming of the topic, the interpersonal by the writer's indication that he is about to inform the reader of the named topic, and the textual by the privileged position of information that sets the context for the details that follow.

The use of a device such as context-creating sentences implies that the writer is concerned not just with what he has to write, but in addition with what the reader's needs for understanding are. While we might expect that the use of this device will increase with the writer's age, we also may expect that its use will depend on how much information is provided about the intended reader and how he or she will respond. The notion here is that information about the intended audience acts as a cue to the writer to decenter from the content to consider additional requirements of writing such as context creation. Along with an increase in the use of context-creating statements with age then, we may expect an increase as the writing situation provides more specific information about the characteristics of the intended readers.

The task used in this first study was the following: Students were asked to write a description of the line drawings presented in

Figure 1 so that the figure could be redrawn from their descriptions by someone who had never seen the drawings before. The two figures were

Insert Figure 1 about here

designed to elicit the use of context-creating statements. First, each figure contains the same geometric forms. Thus information about the second figure can be presented in the context of information about the first. Second, the figure on the right was designed to look rather like a television set viewed from the front. This similarity can be exploited as a context to aid the description of the right hand figure. Third, in each figure rectangle and circle elements are repeated. This repetition permits the context-creating statements about the number and similar shape of the repeated elements.

The writing situation for this description task was varied in two ways--both in terms of how realistic the communication task was and in terms of the age of the intended audience. Let us consider the realism of the task first. We wished to compare the use of the context-creating statements for a fairly realistic communication situation with use under more traditional classroom situations. Three different writing situations were tested. First, for the most realistic students were asked to write the description in the form of a letter to a named student of their own age in another school. The writers were informed that the recipient would attempt to draw the figures from the description, and that the

drawings so made would be returned to each writer. The feedback procedure was in fact carried out. This realistic writing situation was called the letter condition. Second, students were asked to write instructions on how to draw the figures that would be suitable for someone of their own age. Thus the audience was the same age as in the letter condition; but the writing situation was not as realistic since no expectation was given that there would be feedback on the adequacy of the descriptions. This writing situation was called the peer condition. Third, students were asked to write simply so that the figures could be drawn from their descriptions. No mention was made of a potential audience; no expectation of feedback was given. This third writing situation was called the standard writing condition. In each condition, 15 students in each of grades 4, 8, 12, and third year university were tested. The groups of 15 were balanced about equally for sex of student.

To obtain measures of context statements a blind scoring procedure was used. The students' descriptions were typed verbatim, except that they were edited to remove obvious clues about the writing situation such as the opening and closing salutations found in the letter condition. The typed descriptions were ordered randomly across writing condition and grade and were scored independently by two raters for the presence of the following four types of context information. First, a point was scored for any statement of the nature of the task (e.g., I would like

to see how well you can draw a design without first seeing it). Second, a point was scored for any statement of the overall extent of the task (e.g., There are two designs to draw). Third, the descriptions were scored for any statement of the overall characteristics of a particular figure (e.g., For this one, we're going to use the same shapes but put them in a different order). In this category a point was scored separately for each figure. Fourth, the descriptions were scored for any statement of the general characteristics of part of a figure (e.g., Now there are 6 very little circles). In this category also a point was scored separately for each figure. Thus, the maximum context score per description was six. The four types of context-creating sentences are particular to this task and do not have separate theoretical significance; however, all fulfill Halliday's three metafunctions of language.

The two scorers were consistent in recognizing the occurrence of the four types of context statements; they agreed independently on over 95 per cent of the scores for each type.

For analysis purposes an overall context score for each description was obtained by summing over the scores for the four types of context information.² Figure 2 presents the mean overall context score for each grade and writing condition. (Similar patterns of results were found for the four types of context score considered separately.) The

Insert Figure 2 about here

first thing to note about these results is the overall low number of context statements per description. The maximum possible score was 6; these data ranged only from 0 to 1.25. Second, scores were highest on the average for the letter condition as hypothesized; scores were lowest for the standard writing condition, and were at an intermediate level for the peer condition. Third, there was an interaction effect between grade and writing situation, although this interaction effect was not significant statistically. The nature of this interaction was indicated by a trend analysis across grade. A linear trend was found only for the peer condition; both letter and standard writing conditions failed to show any trends.

The writing situation was also varied by specifying audiences of three different ages. First, students were asked to write a description so that the figures could be drawn by a student in grade 3. For this writing situation the audience was younger than the writer; hence, this writing situation was called the youth condition. Second, students were asked to write a description suitable for someone of their own age. This writing situation was the peer condition reported above. Third, students were asked to write a description so that the figures could be drawn by an adult. This writing situation, in which the audience was older than the writer, was called the adult condition. In each audience condition, 15 students in each of grades 4, 8, and 12 were tested.

The descriptions obtained from these audience conditions were scored in the same manner and at the same time as the task conditions. For comparison purposes data from the standard writing condition were considered along with data from the three audience conditions. Figure 3 presents the mean number of context-creating statements per description for each

Insert Figure 3 about here

grade and audience condition. Again, the average number of context-creating statements was low. The effect of the audience information was such that specifying the age of the intended audience did not produce more context statements for grades 4 and 8 compared with the standard writing condition. On the other hand, for grade 12, specifying the audience age did elicit different numbers of context statements. The use was highest for the youth condition lowest for the adult condition, which did not differ from the standard writing condition, and intermediate for the peer condition. Although the effects for the peer condition lay between those for youth and adult the differences of peer versus youth and peer versus adult were not statistically significant. Full data were not obtained for the audience conditions from university students; however, partial data for a youth condition obtained from third year university students revealed that the use of context statements was at the same level as that found with grade 12 students in the youth condition.

This aspect of writing, namely anticipating reader needs, can be contrasted with the content aspect of writing. The effectiveness of written communication probably depends both on meeting reader needs and on providing adequate detailed information; but, a priori how these two aspects affect reader comprehension is not obvious. It may be that context-creating statements facilitate content comprehension generally. Alternatively, context statements may have little to do with content comprehension. We have just begun to examine whether our writing situations affect the information in the descriptions. In a blind procedure, two raters judged whether questions about how to draw the figures could be answered from each description. For example, one of the questions asked about each description of the right-hand figure was: Would the triangle be drawn with the point down? Six similar questions were constructed for each figure. The questions were scored on an eight point scale that ranged from 'yes, information in the description would definitely lead to this kind of drawing' to 'no, information in the description would definitely not lead to this kind of drawing'. Figures 4 and 5 present the mean scores on this subjective rating procedure for the grade and writing conditions. First, for the realistic task conditions,

Insert Figures 4 & 5 about here

there was an increase in information with grade and a weak interaction produced primarily by a relative fall-off in the score for the standard

writing condition with increasing grade. Second, for the audience conditions, a similar pattern of scores was found. The relative decline in scores for the standard writing condition paralleled the data for context use; however, overall the correspondence between the two measures was not marked.

Perhaps context statements did not substantially improve readers' ability to follow instructions, especially given unlimited time to study the descriptions. On the other hand, perhaps our raters, because they knew what the figures looked like, had difficulty assessing the adequacy of information. A more sensitive measure might be to have figures drawn from each description by naive subjects and to record the time it takes to produce the drawings. We are in the process of collecting such data and of analyzing further relationships between context use and readers' ease of comprehension.

Additional aspects of the use of context statements are that they were not used at all by the majority of children, and when used they tended to be grouped within a description. This grouping is shown in Table 1. On the top line are presented the number of descriptions that contained examples of none, one, two, three, or all four types of context-creating statements. On the bottom line are presented the expected numbers of descriptions containing none, one, two, three, or four types of context based on a random distribution of the marginal totals

for the four context measures. There were more descriptions with no

Insert Table 1 about here

context scores than expected--in fact, seventy-one per cent of the students never used context statements. Further, there were fewer descriptions with a single context score than expected, but more descriptions with two or more context scores than expected.

The large number of descriptions that contained no context statements provides a partial reason for the low average context scores obtained in the writing conditions. Within each of the grade and writing condition groups there was a high proportion of descriptions that contained no examples of context use whatsoever. This was most apparent in the descriptions obtained from grade 4 in which the use of context was negligible. Even in those writing conditions in which the use of context was highest, the letter and youth conditions for grade 12 and university, only about half the descriptions contained context statements. Thus, the means for context use that were presented in Figures 2 and 3 were average of some high scores for context use and some very low scores.

Taken as a whole, the context use results reveal something about the age at which writers begin to consider their potential reader. For a realistic communication situation such as the letter condition, context use was found in all grades, although it was most apparent for grades 8 and higher. For the audience writing situations, in which the

information on the writing situation is in the form of a 'generalized other,' context use did not appear until grade 12. Further, use of context was found only when grade 12 students wrote for a younger audience; no effects were found when grade 12 students wrote for an older audience. For the writing situation in which no additional information was given, the standard writing condition, no increases in context use were found at any grade. Thus, there is tentative support for the idea that providing increasing information about the writing task enables the writer to consider aspects of composition in addition to the immediate content.

In the second study we were interested in investigating whether children can alter their writing to accommodate reader requests. The procedure used was a simulation of an editorial criticism situation. Students were asked to write an opinion piece in 15 minutes on the topic, 'Should students be allowed to choose what things they study in school?.' Immediately thereafter, they were asked to imagine that they had submitted the composition for publication and that an editor had requested that the piece be revised before publication. Four different revision requests were used. One request was that the composition be made clearer and more understandable; this revision situation was called the clarity condition. A second request was that better reasons be given for the opinion(s) expressed by the writer; this revision situation was called the convincing-

ness condition. A third request was that the composition be made more interesting; this revision situation was called the interest condition. A fourth request was simply that the composition be revised to make it better. In this last revision situation criticism was not as specific; we expected that in the absence of direction on how to improve the composition writers would concentrate on revising the conventional aspects of writing such as spelling, punctuation, and capitalization. Hence, this last situation was called the mechanical condition. After receiving one of these four revision instructions, the students were given 15 minutes to revise their compositions.

Eighty students were tested in each of grades 4, 8, and 12. Within each grade 20 students wrote in each of the four revision conditions. Within each revision condition 10 of the students had their original composition present while they were writing the revision and the remaining 10 revised without their original composition. Within each of these groups of 10 there were 5 female and 5 male students.

For scoring purposes the compositions were typed verbatim with the exception that any explicit references to the revision condition were removed. A blind scoring procedure was used to rate the differences between each pair of compositions, original and revised. The two scorers were unaware both of which composition in each pair was the revision and of the revision that was requested. First, a general measure of the

difference between each composition in a pair was obtained. The better written composition from each pair was selected; scorers were allowed to declare no difference between the compositions if they wished. Second, differences between each composition of a pair were rated on more specific criteria. Pairs were rated for which composition was clearer, more convincing, more interesting, and better mechanically. One scorer rated according to the order of criteria just given, the other rated in the reverse order.

The original purpose of this study was to determine the age at which these types of revision could be made. For example, perhaps by grade 12 students are able to revise an opinion piece to make it clearer, although not necessarily to make it more convincing or more interesting. The ability to make such a revision would be revealed by a higher number of revision selections for the clearer rating compared with the other four rating criteria.

The search for these types of differences proved to be in vain. The rating procedure, in which differences between two compositions obtained from the same writer were assessed, proved to be extremely difficult. Subsequent examination of the ratings showed that the two scorers' selections were biased toward the longer composition on the ratings for better, clearer, more convincing, and more interesting; selections were biased toward the shorter composition on the mechanics

rating. This bias almost certainly reflects a tendency to use length in the absence of more relevant differences between compositions, rather than a tendency for the longer composition to be better written. In the results reported below this bias has been statistically controlled by covarying out difference in length from differences in ratings.

Consistent differences between revision and original composition ratings were obtained only across grades.³ These differences were global ones that were not specific to a particular revision condition. The pattern of selections for each grade on the five rating criteria is presented in Figure 6. The grey area of each bar indicates the proportion of pairs for which

Insert Figure 6 about here

both scorers agreed that the original composition was superior. The black area of each bar indicates the proportion for which both scorers agreed the revision was superior. Thus, the overall height of a bar indicates the proportion of pairs for which both scorers agreed there was a difference between compositions. The residual proportion not shown on the bar graph was made up of pairs for which the scorers found no difference plus pairs for which the scorers disagreed about the superior composition. An asterisk next to a proportion indicates a significant increase from the immediately lower grade. The overall height of the bars indicates that for all ratings except the mechanical there was an increase from grade 4 to 8 in the proportion of pairs that had a difference between compositions.

An examination of the grey areas indicates that the increase was accounted for by an increase in the proportion of original compositions selected. In other words, the increased number of changes made in grade 8 revisions tended to reduce the quality of writing. In contrast, examination of the black areas indicates that, for the better and more interesting ratings, an increase was found from grade 8 to grade 12 in the number of revised compositions selected. For these two ratings, changes made in grade 12 revisions tended to increase the quality of writing.

At least for this task, initial changes in the original composition produced an inferior written product. It was as if the student realized that revision involved making changes in the original composition but was unable to make changes for the better. Only later did changes begin to produce superior writing. We suggest that the significance of these results lies in the pattern of initial inferior change followed by superior change, rather than in the grade-level norms. Undoubtedly writing situations can be designed that would lead to superior revised compositions in grade 8 and possibly even in grade 4. Our present investigations are aimed at determining what these conditions might be.

In summary, the first study showed that ability to use context-creating sentences was present in students as low as grade 4. Use of these audience-orienting devices increased markedly between grades 4 and 12, but not until grade 12 was their use clearly differentiated according to needs of the audience. Little use was made of context-creating

sentences at any age when the task resembled a standard school writing assignment, but such sentences were used when the task involved real person-to-person communication. The second study suggested that ability to revise compositions on demand followed a curious course of development. In grade 4 students appeared unable to make significant revisions; by grade 8 revision were made that tended to lower the quality of the composition; by grade 12 there was a detectable increase in the frequency of revisions that were judged to constitute improvements. Taken together, the two studies suggested that it was between grades 8 and 12 that students began to apply information of a general nature to modify their writing effectively.

The reasons for the late appearance of modifications in writing compared with modifications in speech await further research. To speculate for a moment, it appears that the central factor may be demands on the individual's information processing capacity. The speaker is supported by the immediate physical context which frequently includes a listener who participates in communication. The writer must supply a context and assume the role of both sender and receiver of the communication. The beginning writer is in an especially unenviable situation, since in addition he must work in an unfamiliar medium. For younger writers the very act of writing language must require a sizeable amount of processing capacity. Two directions are indicated for further research. First are

analyses, such as those by Scardamalia (in press) and Bereiter and Scardamalia (reference note 1), on the processing demands made by various types of writing tasks and strategies. Second are the collection of data on the relationship between the child's information processing capacity and the processing demands of written language.

Reference Note

1. Bereiter, C. and Scardamalia, M. Coordination of information in three kinds of writing. Paper presented at the American Educational Research Association Meeting, Toronto, Canada, March 27-31, 1978.

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Footnotes

1. Some of these data were presented at the American Educational Research Association Meeting, Toronto, Canada, March 27-31, 1978. We would like to acknowledge the kind assistance of Roberta Charlesworth, Coordinator of English for the North York Board of Education, and the cooperation of the principals, teachers, and students of the Board in the collection of these data. This research was supported by Canada Council grant S76-0647-R1 awarded to M. Scardamalia and C. Bereiter. Requests for reprints should be addressed to M. Scardamalia, Department of Psychology, York University, 4700 Keele Street, Toronto, Canada M3J 1P3.

2. All effects discussed, except where noted, were statistically significant ($p < .05$) by standard analysis procedures. Data summarized in Figures 2, 3, 4 and 5 were assessed by analysis of variance with grade and writing condition as fixed effects and students as a random effect. Students were nested within each level of grade and writing condition. Differences between means were assessed by the Tukey Honestly Significant Difference procedure using a more stringent significance criterion ($p < .01$) for testing interaction effects and variance estimates calculated from the tested means where homogeneity assumptions were not met (see Keppel, 1973, pp. 152-163, 244-246).

3. Data were assessed by two multivariate analyses of variance; the variates were the ratings for better, clearer, more convincing, more interesting and mechanics. One analysis assessed the number of composition pairs for which both scorers selected either the original or revision as the superior composition. The other analysis assessed the number of pairs for which both scorers selected the revision. Grade, revision instruction, and presence or absence of the original composition during revision were treated as fixed effects; students nested within each level of the fixed effects were a random effect.

Table 1

Clustering of Context Statements Within Descriptions

Number of context types per description						
	0	1	2	3	4	Total
Observed Numbers	202	41	27	6	9	285
Expected Numbers	162	98	22	2	1	285



Figure 1. Figures used for description study.

CONTEXT SCORE FOR TASK

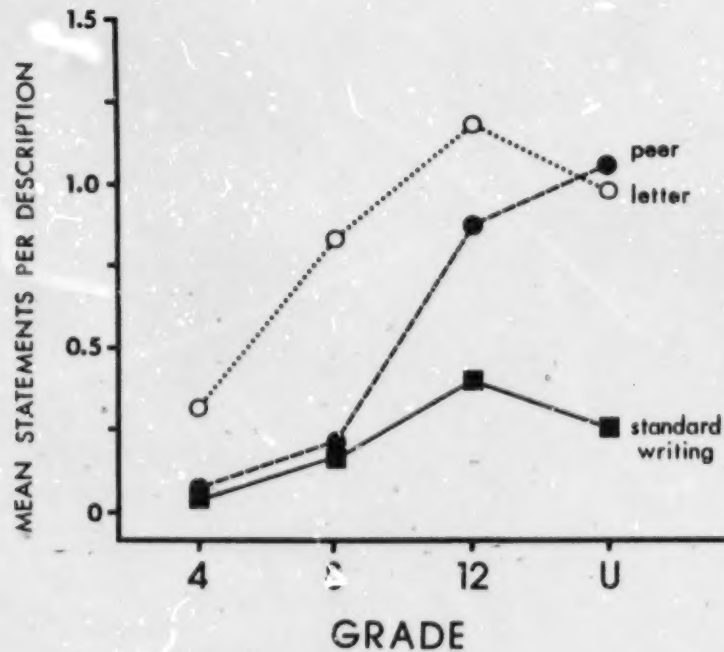


Figure 2. Mean number of context statements per description for task.

MEANS: (standard error in parentheses)

Task	Grade			
	4	8	12	U
Letter	.30 (.16)	.83 (.34)	1.20 (.31)	.97 (.39)
Peer	.07 (.07)	.20 (.11)	.87 (.43)	1.06 (.47)
Standard Writing	.04 (.04)	.16 (.14)	.40 (.20)	.26 (.13)

CONTEXT SCORE FOR AUDIENCE

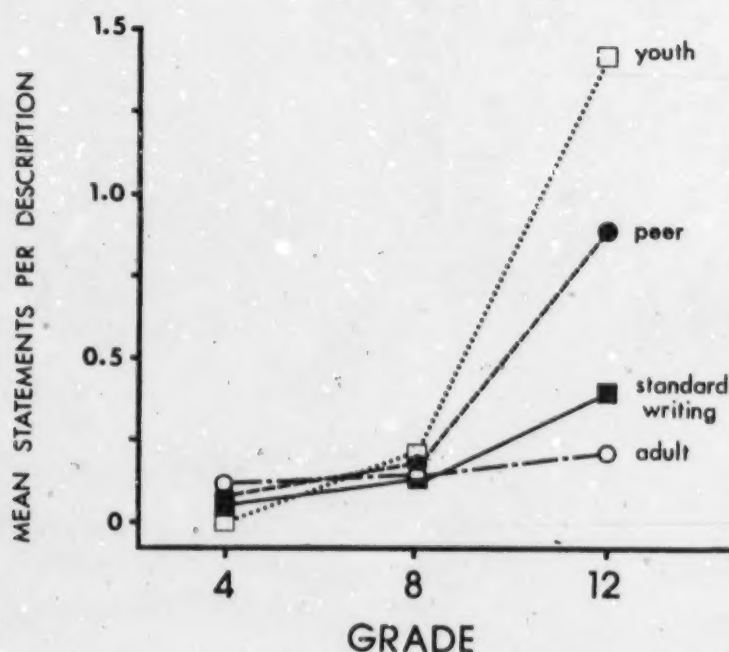


Figure 3. Mean number of context statements per description for audience.

MEANS: (standard error in parentheses)

Audience	Grade		
	4	8	12
Youth	0 (.0)	.20 (.14)	1.44 (.41)
Peer	.07 (.07)	.20 (.11)	.87 (.43)
Adult	.10 (.10)	.16 (.10)	.20 (.12)
Standard Writing	.04 (.04)	.16 (.14)	.40 (.20)

INFORMATION RATING FOR TASK

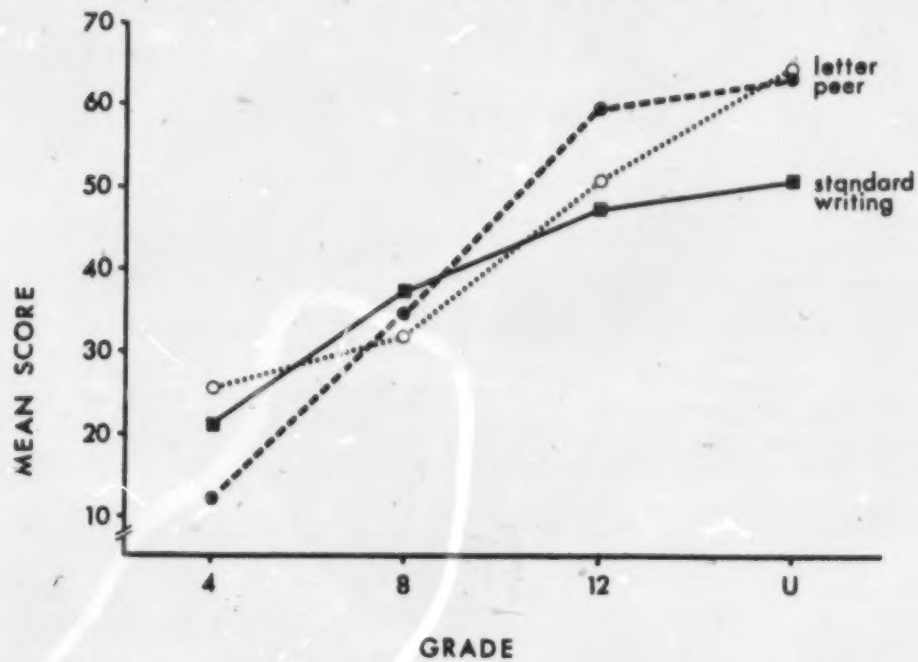


Figure 4. Mean information ratings per description for task.

MEANS: (standard error in parentheses)

Task	Grade			
	4	8	12	U
Letter	25.8 (4.2)	32.9 (3.5)	50.8 (5.1)	64.6 (2.0)
Peer	12.7 (3.3)	34.9 (4.7)	59.5 (3.3)	63.2 (5.0)
Standard Writing	21.3 (3.4)	36.9 (2.9)	47.8 (5.4)	50.8 (5.2)

INFORMATION RATING FOR AUDIENCE

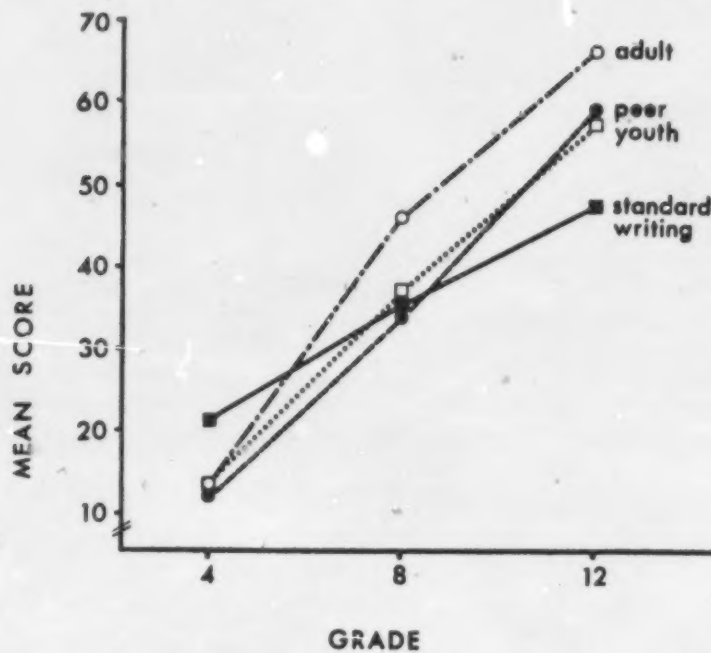


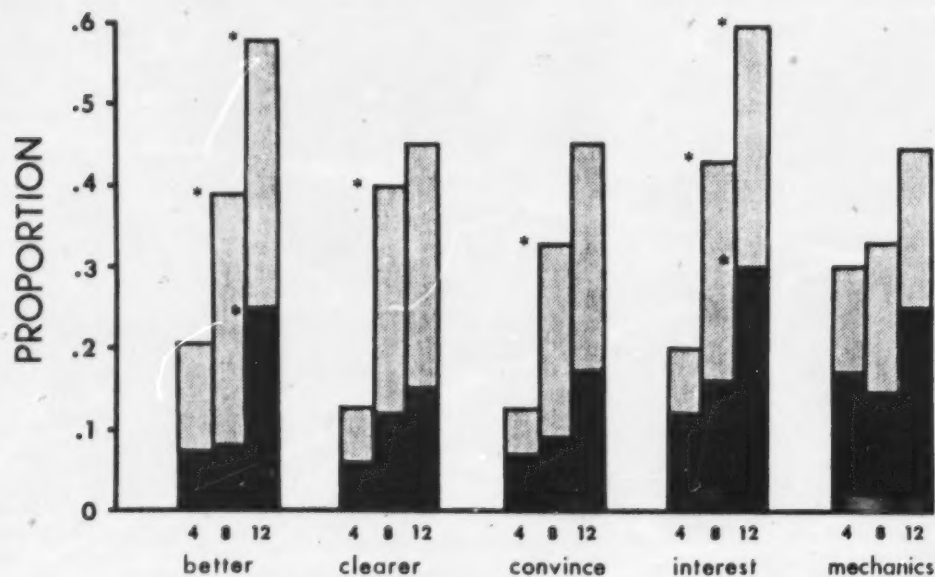
Figure 5. Mean information ratings per description for audience.

MEANS: (standard error in parentheses)

Audience	Grade		
	4	8	12
Youth	13.6 (3.1)	37.5 (3.2)	57.4 (3.4)
Peer	12.7 (3.3)	34.9 (4.7)	59.5 (3.3)
Adult	13.4 (3.1)	46.1 (2.9)	66.9 (2.1)
Standard Writing	21.3 (3.4)	36.9 (2.9)	47.8 (5.4)

COMPOSITION CHOICE:

ORIGINAL
REVISION



GRADE AND RATING

* indicates difference ($p < .05$) from proportion immediately to left

Figure 6. Choice of original and revision composition for grade and rating.

PROPORTIONS:

Rating

	better	clearer	convince	interest	mechanics
A. Original & Revision					
Gr 4	.21	.13	.13	.20	.30
Gr 8	.39	.40	.33	.43	.33
Gr 12	.57	.45	.45	.59	.44
(MSe/n) ^{1/2}	(.06)	(.05)	(.05)	(.06)	(.06)
B. Revision					
Gr 4	.07	.06	.07	.12	.17
Gr 8	.08	.12	.09	.16	.14
Gr 12	.25	.15	.17	.30	.25
(MSe/n) ^{1/2}	(.04)	(.04)	(.04)	(.05)	(.05)